

SEQUENCE LISTING

>

<110> Chugai Seiyaku Kabushiki Kaisha
<110> University College London
<120> HM 1.24-UTILIZING CANCER VACCINES
<130> M915
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<220>
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ccactcatac ccatacgacg tcccaagacta cgctggtaacc gcggccgcg 109
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tagctgttgc taccaagaag aggtgatac agtccatcc catggtggg 109
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<212> DNA
<213> Artificial Sequence
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<223> Primer
<400> 3

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<400> 4	
ctgctgcagt gagatcccag gatccata	28
<210> 5	
<211> 396	
<212> DNA	
<213> Homosapiens	
<223> Nucleotide sequence of extracellular domain of soluble HM 1.24 antigenic protein	
<400> 5	
aac agc gag gcc tgc cgg gac ggc ctt cgg gca gtg atg gag tgt cgc	48
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg	
1 5 10 15	
aat gtc acc cat ctc ctg caa caa gag ctg acc gag gcc cag aag ggc	96
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly	
20 25 30	
ttt cag gat gtg gag gcc cag gcc acc tgc aac cac act gtg atg	144
Phe Gln Asp Val Glu Ala Gln Ala Thr Cys Asn His Thr Val Met	
35 40 45	
gcc cta atg gct tcc ctg gat gca gag aag gcc caa gga caa aag aaa	192
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys	
50 55 60	
gtg gag gag ctt gag gga gag atc act aca tta aac cat aag ctt cag	240
Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln	
65 70 75 80	
gac gcg tct gca gag gtg gag cga ctg aga aga gaa aac cag gtc tta	288

Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu			
85	90	95	
agc gtg aga atc gcg gac aag aag tac tac ccc agc tcc cag gac tcc			336
Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser			
100	105	110	
agc tcc gct gcg gcg ccc cag ctg ctg att gtg ctg ctg ggc ctc agc			384
Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser			
115	120	125	
gct ctg ctg cag			396
Ala Leu Leu Gln			
130			
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<223> Primer			
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<211> 345			
<212> DNA			
<213> Homosapiens			
<223> Nucleotide sequence of extracellular domain of C-terminal-lacking soluble HM 1.24 antigenic protein			
<400> 7			
aac agc gag gcc tgc cgg gac ggc ctt cgg gca gtg atg gag tgt cgc			48
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg			
1	5	10	15
aat gtc acc cat ctc ctg caa caa gag ctg acc gag gcc cag aag ggc			96
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly			
20	25	30	
ttt cag gat gtg gag gcc cag gcc acc tgc aac cac act gtg atg			144

Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met			
35	40	45	
gcc cta atg gct tcc ctg gat gca gag aag gcc caa gga caa aag aaa			192
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys			
50	55	60	
gtg gag gag ctt gag gga gag atc act aca tta aac cat aag ctt cag			240
Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln			
65	70	75	80
gac gcg tct gca gag gtg gag cga ctg aga aga gaa aac cag gtc tta			288
Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu			
)	85	90	95
agc gtg aga atc gcg gac aag aag tac tac ccc agc tcc cag gac tcc			336
Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser			
100	105	110	
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Ser Ser Ala			
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)	<220>		
<223> Primer			
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<210> 9			
<211> 30			
<212> DNA			
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)	<220>		
<223> Primer			
<400> 9			
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<210> 10

<211> 429

<212> DNA

<213> Artificial Sequence

<220>

<223> Nucleotide sequence coding for a fusion protein comprising HA peptide and soluble HM 1.24 antigenic protein

<400> 10

tac cca tac gac gtc cca gac tac gct ggt acc aac agc gag gcc tgc 48

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Thr Asn Ser Glu Ala Cys

1

5

10

15

cgg gac ggc ctt cgg gca gtg atg gag tgt cgc aat gtc acc cat ctc 96

Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu

20

25

30

ctg caa caa gag ctg acc gag gcc cag aag ggc ttt cag gat gtg gag 144

Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu

35

40

45

gcc cag gcc gcc acc tgc aac cac act gtg atg gcc cta atg gct tcc 192

Ala Gln Ala Ala Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser

50

55

60

ctg gat gca gag aag gcc caa gga caa aag aaa gtg gag gag ctt gag 240

Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu

65

70

75

80

gga gag atc act aca tta aac cat aag ctt cag gac gcg tct gca gag 288

Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu

85

90

95

gtg gag cga ctg aga aga gaa aac cag gtc tta agc gtg aga atc gcg 336

Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala

100

105

110

gac aag aag tac tac ccc agc tcc cag gac tcc agc tcc gct gcg gcg 384

Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser Ser Ser Ala Ala Ala

115

120

125

ccc cag ctg ctg att gtg ctg ctg ggc ctc agc gct ctg ctg cag 429

Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser Ala Leu Leu Gln
 130 135 140
 <210> 11
 <211> 378
 <212> DNA
 <213> Artificial Sequence
 <223> Nucleotide sequence coding for a fusion protein
 comprising HA peptide and C-terminal- lacking soluble HM 1.24
 antigenic protein
 <400> 11

tac	cca	ta <td>c</td> <td>gac</td> <td>gtc</td> <td>cca</td> <td>gac</td> <td>ta <td>c</td> <td>gct</td> <td>ggt</td> <td>acc</td> <td>aa <td>agc</td> <td>gag</td> <td>gcc</td> <td>tgc</td> <td>48</td> </td></td>	c	gac	gtc	cca	gac	ta <td>c</td> <td>gct</td> <td>ggt</td> <td>acc</td> <td>aa <td>agc</td> <td>gag</td> <td>gcc</td> <td>tgc</td> <td>48</td> </td>	c	gct	ggt	acc	aa <td>agc</td> <td>gag</td> <td>gcc</td> <td>tgc</td> <td>48</td>	agc	gag	gcc	tgc	48
Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Gly	Thr	Asn	Ser	Glu	Ala	Cys			
1	5			10			15											
cg	g	g	g	ctt	cg	g	ca	gt	at	g	ag	t	gt	cg	aa	at	gt	49
Arg	Asp	Gly	Leu	Arg	Ala	Val	Met	Glu	Cys	Arg	Asn	Val	Thr	His	Leu			
20	25			30														
ctg	ca	ca	gag	ctg	ac	gag	gc	cag	aa	gg	ttt	cag	gat	gt	gag	144		
Leu	Gln	Gln	Glu	Leu	Thr	Glu	Ala	Gln	Lys	Gly	Phe	Gln	Asp	Val	Glu			
35	40			45														
gc	ca	gc	gc	ac	tc	ac	ca	ac	at	gt	gc	ct	at	g	ct	192		
Ala	Gln	Ala	Ala	Thr	Cys	Asn	His	Thr	Val	Met	Ala	Leu	Met	Ala	Ser			
50	55			60														
ctg	ga	ca	gag	aa	gc	ca	gg	ca	aa	ag	aa	gt	gag	gag	ctt	240		
Leu	Asp	Ala	Glu	Lys	Ala	Gln	Gly	Gln	Lys	Lys	Val	Glu	Glu	Leu	Glu			
65	70			75			80											
gg	gag	atc	act	aca	tta	aa	cat	aa	ctt	cag	gac	gc	tct	gca	gag	288		
Gly	Glu	Ile	Thr	Leu	Asn	His	Lys	Leu	Gln	Asp	Ala	Ser	Ala	Glu				
85	90			95														
gt	gag	cg	ct	ag	ag	ag	gaa	aa	cag	gt	tta	ag	gt	ag	atc	gc	336	
Val	Glu	Arg	Leu	Arg	Arg	Glu	Asn	Gln	Val	Leu	Ser	Val	Arg	Ile	Ala			
100	105			110														
gac	aag	aag	ta	ca	cc	aa	gc	tc	cag	ga	tc	ag	tc	gc	378			

Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 95 100 105
 <210> 13
 <211> 418
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Nucleotide sequence coding for H chain V region version
 r of humanized anti-HM 1.24 antibody
 <400> 13
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 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 cag aag ttc aag ggc aga gtc acc atg acc gca gac aag tcc acg agc 288
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg tac tac ttt gac tac 384

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120
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 <211> 418
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Nucleotide sequence coding for H chain V region version
 s of humanized anti-HM 1.24 antibody
 <400> 14
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 cag aag ttc aag ggc aga gtc acc atc acc gca gac aag tcc acg agc 288
 Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120
 <210> 15
 <211> 1014
 <212> DNA
 <213> Homosapiens
 <223> Nucleotide sequence coding for human HM 1.24 antigenic
 protein expressed on cell membrane
 <400> 15
 gaattcggca cgagggatct gg atg gca tct act tcg tat gac tat tgc 49
 Met Ala Ser Thr Ser Tyr Asp Tyr Cys
 1 5
 aga gtg ccc atg gaa gac ggg gat aag cgc tgt aag ctt ctg ctg ggg 97
 Arg Val Pro Met Glu Asp Gly Asp Lys Arg Cys Lys Leu Leu Leu Gly
 10 15 20 25
 ata gga att ctg gtg ctc ctg atc atc gtg att ctg ggg gtg ccc ttg 145
 Ile Gly Ile Leu Val Leu Leu Ile Ile Val Ile Leu Gly Val Pro Leu
 30 35 40
 att atc ttc acc atc aag gcc aac agc gag gcc tgc cgg gac ggc ctt 193
 Ile Ile Phe Thr Ile Lys Ala Asn Ser Glu Ala Cys Arg Asp Gly Leu
 45 50 55
 cgg gca gtg atg gag tgt cgc aat gtc acc cat ctc ctg caa caa gag 241
 Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu Leu Gln Gln Glu
 60 65 70
 ctg acc gag gcc cag aag ggc ttt cag gat gtg gag gcc cag gcc gcc 289
 Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu Ala Gln Ala Ala
 75 80 85

acc tgc aac cac act gtg atg gcc cta atg gct tcc ctg gat gca gag	337
Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser Leu Asp Ala Glu	
90 95 100 105	
aag gcc caa gga caa aag aaa gtg gag gag ctt gag gga gag atc act	385
Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu Gly Glu Ile thr	
110 115 120	
aca tta aac cat aag ctt cag gac gcg tct gca gag gtg gag cga ctg	433
Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu Val Glu Arg Leu	
125 130 135	
aga aga gaa aac cag gtc tta agc gtg aga atc gcg gac aag aag tac	481
Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala Asp Lys Lys Tyr	
140 145 150	
tac ccc agc tcc cag gac tcc agc tcc gct gcg gcg ccc cag ctg ctg	529
Tyr Pro Ser Ser Gln Asp Ser Ser Ala Ala Ala Pro Gln Leu Leu	
155 160 165	
att gtg ctg ctg ggc ctc agc gct ctg ctg cag tgagatccca ggaagctggc	582
Ile Val Leu Leu Gly Leu Ser Ala Leu Leu Gln	
170 175 180	
acatcttggaa aggtccgtcc tgctcggctt ttgcgttggaa cattcccttg atctcatcag	642
ttctgagcgg gtcatggggc aacacggta gcggggagag cacggggtag ccggagaagg	702
gcctctggag caggtcttggaa gggccatgg ggcagtcctg ggtgtggggaa cacagtcggg	762
ttgaccctgg gctgtctccc tccagagcct ccctccggac aatgagtccc ccctcttgc	822
tcccaccctg agattggca tggggtgcgg tggggggggc atgtgctgcc tgggtttatg	882
ggttttttt gggggggggg ttgtttttt ctggggtctt tgagctccaa aaaaataaac	942
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ggcgccgc ca	1014
<210> 16	
<211> 132	
<212> PRT	
<213> Homosapiens	
<223> Amino acid sequence of soluble HM 1.24 antigenic protein	
<400> 16	

12/18

Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
1 5 10 15
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
20 25 30
Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
35 40 45
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
50 55 60
Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
65 70 75 80
Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
85 90 95
Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
100 105 110
Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser
115 120 125
Ala Leu Leu Gln
130
<210> 17
<211> 115
<212> PRT
<213> Homosapiens
<223> Amino acid sequence of extra cellular downing of C-terminal lacking soluble HM 1.24 antigenic protein
<400> 17
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
1 5 10 15
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
20 25 30
Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
35 40 45
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
50 55 60

Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
65 70 75 80

Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
85 90 95

Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
100 105 110

Ser Ser Ala
115

<210> 18

<211> 143

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of a fusion protein comprising HA
peptide and soluble HM 1.24 antigenic protein

<400> 18

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Thr Asn Ser Glu Ala Cys
1 5 10 15

Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu
20 25 30

Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu
35 40 45

Ala Gln Ala Ala Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser
50 55 60

Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu
65 70 75 80

Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu
85 90 95

Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala
100 105 110

Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser Ser Ala Ala Ala
115 120 125

Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser Ala Leu Leu Gln
130 135 140

<210> 19

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of a fusion protein comprising HA peptide and C-terminal lacking soluble HM 1.24 antigenic protein

)<400> 19

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Thr Asn Ser Glu Ala Cys
1 5 10 15

Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu
20 25 30

Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu
35 40 45

Ala Gln Ala Ala Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser
50 55 60

Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu
65 70 75 80

Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu
85 90 95

Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala
100 105 110

Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser Ser Ser Ala
115 120 125

<210> 20

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of L chain V region version a of

humanized anti-HM 1.24 antibody

<400> 20

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-15 -10 -5

Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
-1 1 5 10

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
15 20 25

Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
30 35 40 45

Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
50 55 60

Phe Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
65 70 75

Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
80 85 90

Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 95 100 105

-310- 31

≤211> 139

<212> PBT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of H chain V region version r of
humanized anti-HM 1.24 antibody

<400> 21

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120
 <210> 22
 <211> 139
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Amino acid sequence of H chain V region version s of
 humanized anti-HM 1.24 antibody
 <400> 22
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 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser
 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120
 <210> 23
 <211> 180
 <212> PRT
 <213> Homosapiens
 <223> Amino acid sequence of human HM 1.24 antigenic protein
 expressed on cell membrane
 <400> 23

Met Ala Ser Thr Ser Tyr Asp Tyr Cys Arg Val Pro Met Glu Asp Gly
 1 5 10 15
 Asp Lys Arg Cys Lys Leu Leu Leu Gly Ile Gly Ile Leu Val Leu Leu
 20 25 30
 Ile Ile Val Ile Leu Gly Val Pro Leu Ile Ile Phe Thr Ile Lys Ala
 35 40 45
 Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
 50 55 60
 Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
 65 70 75 80
 Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
 85 90 95
 Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
 100 105 110
 Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
 115 120 125
 Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
 130 135 140
 Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
 145 150 155 160

Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser

165

170

175

Ala Leu Leu Gln

180